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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,095	07/08/2003	Seiichi Yamamoto	FSF-031401	8356

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TAIYO CORPORATION  
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ALEXANDRIA, VA 22314

EXAMINER
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CHEA, THORL

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/614,095	<b>Applicant(s)</b> YAMAMOTO, SEIICHI	
	<b>Examiner</b> Thorl Chea	<b>Art Unit</b> 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is responsive to the communication on June 5, 2006; claims 1-20 are pending in this instant application; claims 13-20 are withdrawn as being drawn to non-elected invention.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2 recite “a metal selected from iron, copper, a rhodium and ruthenium”. This is improper Markush group terminology. An example of suitable Markush group terminology is “at least one metal selected from the group consisting of iron, copper, rhodium and ruthenium”. There is no antecedent basis for “the other metal” in claim 1, line 9, and claim 2, line 11. If the other metal is iron, copper, rhodium or ruthenium, the metal previously recited should be “, and other metal selected from the group consisting of iron, copper, rhodium and ruthenium” should be used. The claiming of “90 % or more of a total iridium amount contained in the core portion” and “at least 50 % of the other metal is contained in the shell portion of the grain” in claim 1 and “90 % or more of a total iridium amount contained in the core portion” and “at least 70 % of the other metal is contained in the shell portion of the grain” is indefinite in the absence of providing the amount of the iridium and the other metal since “90 %”, “50 %” or “70 %” is relative term, and the amount associated with the percentage cannot be determined in the absence of providing

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the total amount of iridium, and the metal selected from the group consisting of is iron, copper, rhodium and ruthenium. It is suggested to incorporate the amount of iridium in 5 and the metal other than iridium in claim 6 in claims 1, 2 to further define the amount of iridium and the metal other than the iridium.

Claims 3, 6 recite "said metal of groups 3 to 6 of the periodic table". There is insufficient antecedent basis for such term in the claims.

4. Claims 3, 6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claiming of "said metal of group 3 to 10 of the periodic table other than iridium in the silver halide grains" fails to further limit scope of metal selected from iron, copper, rhodium and ruthenium" in claim 1.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Uehara et al (US Patent No. 5,716,775) and Habu et al (US Patent No. 4,581,327). Uehara et al disclose a heat developable material containing light sensitive silver halide emulsion (abstract), organic silver salt (col. 17, lines 1-19), reducing agent (col. 17, lines 30-44) and binder (col. 16, lines 28-51). The silver halide emulsion contains heavy metal which

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can be use singly or as a mixture of two or more of them including iridium, rhodium and iron, and wherein the iridium is an amount of  $10^{-9}$  to  $10^{-6}$  per mole of silver halide and can be added to the core and/or shell (col. 14, lines 1-26). Habu discloses a silver halide emulsion having outmost shell portion contains rhodium atom, and the core contains iridium. The core have an average size of 0.02 to 1.0 micron, and the final average size of complete grains with the shell is between 0.05 to 1.5 microns.

Uehara et al suggest the use of the iridium in the core of the silver halide emulsion, but not specifically discloses the use of the rhodium or iron in the shell and the core portion of silver halide grain having core portion correspond to 50 % of the total mole % of silver halide in the grains. However, Habu discloses a silver halide grain containing the rhodium in the shell and the core portion encompasses the scope 50 % of the total mole % of silver halide in the grains. See the size of the core with respect to the total size of the emulsion taught in Habue, i.e., to complete size of the silver halide emulsion can be 1.0 micron and the core size can be relatively 0.5 micron, and therefore the ratio of the core to the complete size of the silver halide emulsion can be 50 %. Accordingly, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use the metal other than iridium such as rhodium in the shell portion of the silver halide core/shell grain taught in Uerata et al with an expectation of achieving a material with excellent in pressure property and low in fog, and thereby provide the invention as claimed.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Uehara et al (US Patent No. 5,716,775) and Habu et al (US Patent No. 4,581,327) as applied to claims 1-9, 11-12 above, and further in view of Farid et al (US Patent No. 5,747,236).

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Farid et al disclose fragmentable electron donor to increase the sensitivity of silver halide emulsion. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use fragmentable electron donor taught in Farid to increase the sensitivity of the material obtained by the combination of Uehara et al and Habu , and thereby provide a material as claimed.

8. Claims 4, 12 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Uehara et al (US Patent No. 5,716,775) and Habu et al (US Patent No. 4,581,327) as applied to claims 1-9, 11-12 above, and further in view of Hatakeyama et al (US Patent No. 6,110,659). See Hatakeyama et al in column 8, lines 21-54 which discloses silver halide core/shell having multilayer structure having 2 to 5 layers, and the metal complex may be obtained in the silver halide grains uniformly or at high concentration in either in the core or in the shell. The size of the grains is from 20 nm to 120 nm (col.7 lines 55-61). It would have been obvious to the worker of ordinary skill in the art in the time the invention was made to form multilayer structure such as taught in Hatakeyama et al for the material obtained by the combination of Uehara et al and Habu with an expectation of achieving a material with excellent in pressure property and low in fog, and thereby provide the invention as claimed.

***Response to Arguments***

9. Applicant's arguments filed June 5, 2006 have been fully considered but they are not persuasive because new ground of rejection set forth above. It has been known to use the iridium in the core and the metal other than iridium in the shell such as shown in the above rejection.

The Declaration provided submitted on August 23, 2005 fails to overcome the rejection above. The Declaration is not commensurate with the scope of the claimed invention.

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The core of 30 % or 25 % is outside the scope of 50 % of the grain claimed in the present claimed invention. For instance the sample 14c having core portion 30 %, Ir (100 %), shell portion (70 %), and metal other than Ir in the shell portion Fe (100 %). This sample is outside the scope of the claimed invention wherein "core portion correspond to 50 % of the total mole % of the silver halide grains", and wherein the comparative sample has 30 %. None of the samples contain in the Declaration is within the scope of the claimed invention, and the applicants' argument are not clearly understood.

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tchea   
02-03-2006



Thorl Chea  
Primary Examiner  
Art Unit 1752